

ABSTRACT OF THE DISCLOSURE

A thin film transistor structure for a field emission display is disclosed, which has a substrate; a patterned poly-silicon layer having a source area, a drain area, and a channel on the substrate; a patterned first gate metal layer; a first gate-insulating layer sandwiched in between the poly-silicon layer and the first gate metal layer; a patterned second gate metal layer; and a second gate-insulating layer sandwiched in between the poly-silicon layer and the second gate metal layer; wherein the thickness of the second insulating layer is greater than that of the first gate-insulating layer, and the absolute voltage in the channel under the first gate metal layer is less than that under the second gate metal layer when a voltage higher than the threshold voltage thereof is applied to both of the first gate metal layer and the second gate metal layer.